IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

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UNITED STATES OF AMERICA,	)	
	)	
Plaintiff,	)	
v.	)	Criminal Action No. 05- 21
	)	
MOTIVA ENTERPRISES LLC,	)	
	)	
Defendant.	)	

STATEMENT OF FACTS

The United States and the defendant, Motiva Enterprises LLC ("Motiva"), agree and stipulate if this matter were to come to trial, the United States could prove the following facts regarding the defendant's conduct beyond a reasonable doubt:

Background

1. At all relevant times, Motiva refined and marketed gasoline to more than 13,000 gasoline stations. The company's assets included, *inter alia*, four refineries capable of refining approximately 860,000 barrels per day. One of these refineries was located in Delaware City, Delaware (hereinafter referred to as "Delaware City Refinery" or "DCR").

2. Within the Delaware City Refinery, there was an acid tank farm which included six stationary carbon steel tanks, each having a diameter of 47 feet, a height of 32 feet, and a normal capacity of 415,000 gallons. These tanks, which were originally built in 1979, were used to store fresh and spent sulfuric acid. On July 17, 2001, an explosion occurred inside one of these tanks, Tank 393, causing a release of approximately 1.1 million gallons of spent sulfuric acid.

3. Sulfuric acid is a colorless, oily liquid that is very corrosive and reacts chemically with many other materials and substances. Fresh sulfuric acid typically contains 99 percent acid and 1 percent water. Sulfuric acid is listed as an Extremely Hazardous Substance pursuant to 42 U.S.C. § 11002(a)(2). *See* 40 C.F.R. pt. 355, App. A.

4. DCR used sulfuric acid as a catalyst in its alkylation process, in which smaller molecules are combined in the presence of sulfuric acid to form compounds called alkylates, the high octane components of gasoline. After being used in this process, the sulfuric acid is considered spent acid due to the presence of, among other things, hydrocarbons. Spent sulfuric acid typically contains 88 to 95 percent sulfuric acid and up to 5 percent water, with the balance being hydrocarbons, including some flammable hydrocarbons that can vaporize.

5. Spent sulfuric acid from alkylation units, such as the acid in Tank 393, normally contains sufficient flammable hydrocarbons to generate a flammable atmosphere given the presence of oxygen. Because of the presence of hydrocarbons, tanks containing spent sulfuric acid require special precautions, including an inerting system and a flame arrestor.

6. The original purpose of Tank 393 was to store fresh sulfuric acid. In March 2000, it was converted to spent acid service, although from time to time it continued to hold fresh sulfuric acid. On July 17, 2001, Tank 393 contained spent sulfuric acid.

The Incident

7. For the last eight years of its life, Tank 393 had a history of localized corrosion and leaks, including six leaks from June 1998 to May 2001. Furthermore, there were four inspection reports after September 1999 that were generated as a result of leaks, stating that Tank 393 should be taken out of service as soon as possible for internal inspection due to tank corrosion and leaks. Moreover, in 1994, Motiva's inspectors estimated that Tank 393 had four

years remaining before reaching its corrosivity limit. Nevertheless, the last internal inspection of Tank 393 was conducted in 1994, seven years before the explosion. Although Tank 393 was finally scheduled to be removed from service in February 2001, the schedule was changed and the removal of Tank 393 was deferred until January 2002 due to "financial constraints."

8. In addition to the problems with tank corrosion, there were problems associated with the conversion of Tank 393 from fresh acid service to spent acid service. When Motiva converted Tank 393 from fresh sulfuric acid service to spent sulfuric acid service, Motiva did not utilize the Management of Change ("MOC") process. The MOC process would have provided for (a) the review and sign-off on the proposed changes by subject area managers (e.g., corrosion, tank design) and higher level management; (b) the process hazard review; and (c) the pre-startup safety review. To enable the conversion of Tank 393 to spent acid service, Motiva issued a work order to its primary on-site maintenance contractor ("Contractor") for the installation of an inert gas blanketing system, flame arrester, and pressure relief vacuum. Motiva's work order did not request engineering analysis or support from its Contractor for the conversion of the tank's service.

9. Besides its failure to utilize the MOC process, the steps that Motiva took to convert Tank 393 to spent acid service were inadequate because it failed to: (a) ensure that the inert gas was supplied to the tank through a sealed hard pipe; (b) ensure that the inert gas system for Tank 393 was equipped with its own regulator; (c) ensure that the common overflow line—connecting the vapor space of Tank 393 to two tanks opened to the atmosphere—was blinded; (d) ensure the structural integrity of Tank 393's roof and roof support system; and (e) ensure that the supply of inert gas to Tank 393 was sufficient to prevent the formation of a flammable gas mixture in the vapor space of the tank. In addition, Motiva failed to identify the possible

increase of moisture in the tank as the potential cause of the localized corrosion in the shell of Tank 393.

10. As a result of Tank 393's history of significant corrosion and improper conversion, there was a release of spent sulfuric acid vapors, an extremely hazardous substance, into the environment.

11. There were numerous email communications among Motiva employees regarding the problems surrounding Tank 393 and discussing the immediate need to take Tank 393 out of service:

a. On May 30, 2001, at 6:57 a.m., Staff Engineer # 1 sent an email to the Assistant Plant Manager for Operations with the subject header "Tank 393," stating "I saw yesterday's M-21 [non-reportable leak] for Tank 393 and didn't know whether you had any of this additional information." Staff Engineer # 1 attached a weekly tank report that listed Tank 393 as one of the tanks not removed from service due to financial constraints and three inspection reports which recommended taking Tank 393 out of service as soon as possible for an internal inspection due to corrosion on the shell.

b. On May 30, 2001, at 7:56 a.m., the Assistant Plant Manager for Operations sent an email to his immediate subordinate, the Manager for Oil Movements, Environmental Operations, and Transportation ("the Manager") with the subject header "FW: Tank 393," stating "FYH. We must figure out how to get this tank out of service for inspection. The history provided below supports an approach using extreme measures. Develop a plan and then let's review." The Manager did not inquire about or follow-up on this email.

c. On May 31, 2001, a Process Engineer sent an email to Staff Engineer # 2 with the subject header "Tk 393 Spent Acid Leak," attaching the hydrocarbons release report for the leak on Tank 393 that month and stating that, even though the May 2001 leak was reported to the Delaware Response Center, the leak was not a reportable quantity spill.

d. On June 1, 2001, Staff Engineer # 2 replied to the May 31 email, stating "Although this leak did not have to be reported to the National Response Center and the Delaware Response Center (less than 66 gallons) the leak was large enough so that it has to be reported internally (greater than 1Bbl.). Once again, repeating the obvious, this tank should be taken out of service and repaired." Motiva's managers and supervisors received carbon copies of this email, but did not inquire or respond to this email.

12. On June 27, 2001, an acid plant operator submitted an unsafe conditions report after he rejected a hot works permit on the acid tank catwalk because of high flammable vapor readings. The report outlined some of the problems with Tanks 393's inerting system and stated that the tank farm needed immediate attention. Besides an initial response by Motiva's Fire and Safety Department, the content of this report was not addressed prior to the July 17, 2001 explosion.

13. Beginning in late May 2001, the Contractor's boilermakers were repairing the weakened and corroded catwalk at the acid tank farm. The catwalk was located at the roof level of these tanks and connected the tanks to each other. Tank 393 was located at the northeast corner of the acid tank farm, with Tank 396 approximately 25 feet to the west. Tank 393 had several holes due to the corrosion in the tank roof and shell that were adjacent to the catwalk.

14. On July 17, 2001, four of the Contractor's boilermakers received their assignment to work on the catwalk repair job. The work plan was to cut out corrosion-damaged sections of grating and replace them by welding new sections in place. Motiva approved a hot works permit which allowed the boilermakers to "burn/weld & grind" on the grating at Tank 396. The hot works permit did not indicate that "spark containment" was required for the authorized grating repair work.

15. During the afternoon of July 17, 2001, flammable vapors from Tank 393 reached a heat source. This resulted in an explosion inside Tank 393 which caused it to separate from its foundation pad and to collapse toward the north, pulling down the catwalk. At the time of the explosion, there were two boilermakers doing repair work on the catwalk at Tank 393. One of the boilermakers was on the portion of the catwalk that was pulled down as Tank 393 collapsed and was consumed in the explosion. The other boilermaker was able to escape by running away from the explosion on the catwalk, but suffered serious bodily injuries. Eight other workers were injured due to the smoke and acid vapors while trying to escape from the explosion and collapsing tank.

16. The explosion caused Tank 396 to release its contents as well, with flammable material burning on top of the acid which then overwhelmed the dike diversion system and flowed up through the grating on the streets outside the dike. Approximately 99,000 gallons of sulfuric acid spilled into the Delaware River, resulting in approximately 2,500 dead fish and 250 dead crabs.

Post-Incident

17. On July 17, 2001, Motiva had a NPDES permit issued by the State of Delaware authorizing it to discharge certain pollutants into the Delaware River, a water of the United

States, from designated locations known as "outfalls." The permit also required Motiva to perform monitoring of its wastewater on a periodic basis at various locations at the DCR and to report all monitoring data to the Delaware Department of Natural Resources and Environmental Control ("DNREC").

18. Outfall 001 was the actual entry point into the Delaware River for discharges from the DCR. The NPDES permit set numerical limits on the discharges at this location for various parameters, including pH, a measure of acidity of the wastewater. The permit also set numerical limits on other parameters measured at outfall 601, the monitoring point for wastewater leaving the DCR's wastewater treatment plant. These parameters included biochemical oxygen demand ("BOD"), total organic carbon ("TOC"), total suspended solids ("TSS"), and oil and grease. Wastewater from the treatment plant eventually mixed with other wastewater at outfall 001 for discharge into the Delaware River.

19. The explosion and subsequent release of sulfuric acid from various tanks resulted in acid soaking into the ground and flowing into the DCR's waste water treatment and other locations leading to outfalls 601 and 001.

20. Sampling conducted by Motiva showed that it exceeded the following daily maximum concentration permit limits for outfall 601 on the following as measured in milligrams per liter (mg/l) and shown as permit limit/actual:

DATE	BOD	TOC	TSS	OIL & GREASE
July 19, 2001	44/106	75/103		
July 20, 2001	44/133	75/165	43/117	13/18
July 21, 2001	44/76	75/100		
July 22, 2001	44/68			
July 23, 2001	44/53			

21. Sampling conducted by Motiva showed that it exceeded the following daily maximum loading limit for outfall 601 on the following days as measured in pounds per day and as shown as permit limit/actual:

DATE	BOD	TOC	TSS
July 19, 2001	3326/7752	5655/7581	
July 20, 2001	3326/9321	5655/11,546	3218/8182
July 21, 2001	3326/4465	5655/5855	
July 22, 2001	3326/4744		
July 23, 2001	3326/3819		

22. Immediately following the July 17, 2001 explosion, effluent containing spent sulfuric acid flowed into sewers leading to DCR's waste water treatment plant ("WWTP"), as well as to other sewers eventually leading to outfall 001 to the Delaware River. The WWTP had two "trains" through which effluent flowed for treatment prior to discharge to outfall 001 to the Delaware River. The effluent initially overwhelmed the WWTP and began to kill the biomass used to treat DCR's wastewater.

23. Motiva initially attempted to route the effluent into designated spill diversion tanks. After the tanks were filled to capacity, Motiva decided to direct the effluent back to the WWTP.

24. For a period of days following the July 17 incident, Motiva sent acid-containing effluent through the first train of the WWTP for treatment prior to discharge. However, in order to prevent more serious damage to the WWTP, and to avoid further harm to the biomass, Motiva decided to close and isolate the second "train." Due to the large quantities of effluent and the operation of only half of the WWTP, Motiva had to reduce the residence time for effluent

flowing through the first train. As a result, the effluent was insufficiently treated in the WWTP prior to being discharged at outfall 001.

25. After the explosion on July 17, 2001, and pursuant to a July 18, 2001 order issued by DNREC, Motiva performed sampling every half hour to measure the pH of the discharge from outfall 001 into the Delaware River. Motiva's NPDES permit required the discharge to have a pH between six (6) and nine (9) standard units ("SU") (seven (7) SU is neutral on the pH scale). Motiva's sampling showed that its discharge fell below the minimum six (6) SU on repeated occasions on July 18, 2001, with values as low as 2.2 SU.

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